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~~SYSTEM AND METHOD FOR DISTRIBUTING LOTTERY TICKETS~~

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**3 OF APPLICATION
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PATENT APPLICATION SERIAL NO. 128070

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Date: December 3, 1987
Re: 332-2130TO THE COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

Sir:

With reference to the filing in the United States Patent and Trademark Office of an application for patent in the name(s) of: Robert L. Burr et al.

entitled: 501 SYSTEM AND METHOD FOR DISTRIBUTING LOTTERY TICKETS

This is an application of a small entity under 37CFR 1.9(f) and the amounts shown in parentheses below have been employed in calculating the fee. Small Entity Verified
Statement(s) is (are) enclosed.

The following are enclosed:

 Specification 49 Claims(s) (including 7 independent claims) This application contains a multiple dependent claim. Oath or Declaration and Power of Attorney 9 (informal) Sheet(s) of Drawings Our check for \$ 824.00, calculated as follows:

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Total Number of Claims in excess of 20 at \$12.00 (6.00) each		\$348.00
Number of Independent Claims in excess of 3 at \$34.00 (17.00) each		\$136.00
Multiple Dependent Claim Fee at \$110.00 (55.00)		
Total Filing Fee		\$824.00

Assignment Recording Fee \$7.00 (+ \$2 for each additional patent in the assignment) ..

 Order Form for Recording Assignment Certified copy of each of the following application(s) to substantiate the claim(s) for priority made in the Declaration:

Application No. filed in

Please charge any additional fees required for the filing of this application or credit any overpayment to Deposit Account No. 03-3925. A duplicate copy of this letter is enclosed.

Respectfully submitted,

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
APPLICATION FOR LETTERS PATENT

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LOTTERY TICKETS

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SYSTEM AND METHOD FOR DISTRIBUTING LOTTERY TICKETS

FIELD OF THE INVENTION

The present invention relates generally to ticket dispensing systems and more particularly relates to a system and method for distributing lottery tickets.

BACKGROUND OF THE INVENTION

State-sponsored lotteries are now a popular and accepted method of generating revenue in place of taxes. One popular form of the lotteries is the Lotto-type game where the player selects his own numbers, for example by filling out a computer card, and receives a lottery ticket which has been printed with his selected numbers. A drawing is then held at a later time to determine the winning numbers. Another popular form of lottery uses the so-called instant lottery tickets, on which winning or non-winning combinations are preprinted before distribution so that no later drawing is necessary and the player knows immediately after purchasing his ticket whether or not he has won.

The usual system for distributing Lotto-type lottery tickets includes a large number of ticket-dispensing remote units located at drug stores, supermarkets, liquor stores and the like. Each unit is independent and is operated by the store owner, who customarily receives a portion of the ticket price for each lottery ticket sold. The usual system for distributing instant lottery tickets, on the other hand, is entirely clerical, with the tickets being stored in a drawer and counted out by hand. The store owner typically is responsible for keeping track of the

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number of tickets sold, making redemption payments up to a certain amount for certain types of winning tickets and for providing such sales and pay-out information to the state. The state in turn calculates the money due from or owing to the store owner and sends an invoice and/or money payment. Given the very large number of stores which now sell lottery tickets, it would be highly desirable to simplify the accounting procedure so as to avoid any mistakes or improprieties by the store owner and to assure proper and prompt payment of all monies due. It would also be valuable to the state to know on a daily basis whether each store owner has a sufficient supply of tickets, as well as how much money is due that day.

Another consideration in lottery ticket distribution is the speed with which the lottery tickets may be sold. It is a frequent occurrence in large cities for long lines of ticket buyers to form at lunch time or after work in order to buy tickets. As mentioned above, the ticket seller has conventionally had to count out and hand instant lottery tickets himself to the customers. It would be highly advantageous and to have a ticket-dispensing unit which would itself dispense instant or other lottery tickets at an outlet where they are easily accessible to the customer.

Still another consideration in a lottery ticket-dispensing unit is security. Particularly when instant tickets are being dispensed, the unsold tickets should be locked up in the unit or drawer to prevent their theft. Since the unit or drawer must be periodically opened to allow a new supply of lottery tickets to be inserted, it is

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a *desirable*
important to keep track of when and how often the tickets
a are replaced. In addition, it may be necessary, for security
a reasons, to keep track of which lottery tickets were sold
a from which location, both to detect and prevent forgeries
a and unauthorized sales and to assist the customers in making
a complaints, suggestions or the like.

a Particularly when a large number of tickets *are*
a stored within the dispensing unit, it is an advantageous
a *of* *dispense tickets*
a feature, in the present invention to *provide the tickets in a*
a *stored in form*
a *fan-fold stream* so that they may be rapidly fed out from
a *unintentionally dispensing too many tickets*
a storage without the risk of *double feeding* present when
a separated tickets are stored. There is as yet no
a standardization in the size of the tickets, which come in
a *at therefore, it*
a various widths and lengths. *It* would be highly advantageous
a to provide a dispensing mechanism *within the dispensing unit*
a *ticket* *one another*
a to separate the tickets from *the stream* while ensuring that
a the separation of the tickets occurs only at the joinder
a *despite the variation in the*
a line therebetween, *since again for security reasons*
a *generally only complete tickets are redeemable.*

OBJECTS AND SUMMARY OF THE INVENTION

Accordingly, it is an object of the present invention to provide a system and method for distributing lottery tickets which avoid the above-described difficulties of the prior art.

It is another object of the present invention to provide a system and method for distributing lottery tickets in which sales data for a number of different ticket-

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dispensing units is automatically transmitted to a central
data processor for system-wide accounting evaluation.

It is yet another object of the present invention to provide a system and method for distributing lottery tickets in which accounting information may be automatically calculated at each appropriate ticket-dispensing unit for print-out thereat.

It is still another object of the present invention to provide a method and system for distributing lottery tickets in which communication between the central data processor and the dispensing units is periodically established so as to transfer the sales data during limited intervals of time, thereby avoiding the need for a permanent communication link.

It is still another object of the present invention to provide a method and system for dispensing lottery tickets in which an accurate and current account of the ticket supply and monies due is available both to a controlling authority and to the sales agents.

It is a further object of the present invention to provide an apparatus for dispensing lottery tickets including a control panel mounted at the front and accessible to the sales agent and a dispensing outlet at the back and accessible to the customer so as to speed up the dispensing of tickets.

It is still a further object of the present invention to provide a method and apparatus for dispensing tickets in which the tickets are stored in a ~~fan-fold~~ ^{strip or} stream and are separable from each other along lines of weakness.

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It is yet a further object of the present invention to provide a method and apparatus for dispensing tickets in which the tickets are separated by bursting the lines of weakness to provide an automatic mechanical alignment of the tickets.

It is yet a further object of the present invention to provide a method and apparatus for dispensing lottery tickets in which each access to a ticket storage area is detected and recorded.

In accordance with an aspect of the present invention, a system for distributing lottery tickets comprises central processing means, a plurality of remote units for dispensing lottery tickets, each remote unit including memory means for storing sales data indicating at least a number of lottery tickets dispensed by the respective remote unit, and communication means actuatable for selectively placing the data processing means in communication with at least one remote unit, the remote unit transferring the sales data to the data processing means and the data processing means transferring at least message data to the remote unit through the communication means. Advantageously, the communication means includes dial-up modem means which may be actuated at pre-selected intervals, for example, once a day, to transmit data between the data processing means and one remote unit.

In accordance with this aspect of the present invention, a method of distributing lottery tickets comprises the steps of dispensing lottery tickets at a plurality of remote locations, memorizing at each remote

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location sales data indicating at least a number of lottery tickets dispensed at the respective location, transferring the memorized sales data from at least one remote location to a central data processing location over an electronic communication system and transferring message data from the central data processing location to the remote location over the system.

In accordance with a further aspect of the present invention, apparatus for dispensing lottery tickets comprises a box-like module having opposed front and back surfaces, ticket storage means within the module for storing a plurality of lottery tickets, control panel means mounted at the front surface of the module and being actuatable for initiating dispensing of the lottery ticket, a dispensing outlet manually accessible at the back surface for receiving a dispensed lottery ticket from the ticket storage means and ticket dispensing means responsive to the control panel means for dispensing a lottery ticket from the ticket storage means to the dispensing outlet, whereby the dispensed lottery ticket may be manually removed from the apparatus.

In accordance with yet another aspect of the present invention, apparatus for dispensing tickets comprises ticket storage means for storing a plurality of tickets connected in a fan-fold stream headed by a leading ticket, the tickets being separable from each other along lines of weakness, transport means for feeding the stream of tickets from the ticket storage means along a predetermined dispensing path, separation means for separating the leading

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ticket from the stream along a leading line of weakness between the leading ticket and a next following ticket and manually accessible outlet means for receiving the separated ticket. Advantageously, the separation means includes a dull edge bursting blade moveably mounted adjacent a predetermined bursting position along the path, holding means for holding the stream of tickets against substantial deflection from the path at the bursting position, and bursting blade drive means for bringing the bursting blade into bursting contact with the stream of tickets at the bursting position to burst the leading ticket from the next following ticket. In a further development of this aspect of the present invention, the separation means includes feed alignment means including sensor means for detecting a present position of the leading ticket relative to the bursting position, means for determining a transport direction and a displacement distance necessary to bring the leading line of weakness to the bursting position and transport control means for generating a transport control signal indicative of the transport direction and displacement distance, the transport means being responsive to the transport control signal for transporting the ticket stream in transport direction by the displacement distance.

These and other objects, features and advantages of the present invention will become clear from the following detailed description of a preferred embodiment of the present invention taken in connection with the accompanying drawings, throughout which like reference numerals identify like elements and parts.

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332-2130BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a schematic diagram illustrating a preferred embodiment of the system for distributing lottery tickets according to the present invention;

Fig. 2A is an exemplary daily sales report produced by the present invention;

Fig. 2B is an exemplary weekly sales report produced by the system according to the present invention;

Fig. 2C is an exemplary weekly invoice produced by the system according to the present invention;

Fig. 2D is an exemplary current sales report produced by the system according to the present invention;

Fig. 3 is a front elevational view of the preferred embodiment of a ticket-dispensing unit according to the present invention;

Fig. 4 is a partial rear elevational view of the embodiment of Fig. 3;

Fig. 5 is a schematic view of the ticket transport mechanism of the preferred embodiment;

Fig. 6 is a schematic view of a leading edge ticket sensor of the preferred embodiment;

Fig. 7 is a ~~partial elevational~~ ^{perspective} mechanical view of the ticket drive and burster assembly of the preferred embodiment;

Fig. 8A is a diagrammatic illustration for explaining the alignment process of the ticket drive and burster assembly of Fig. 7;

Fig. 8B is a second diagrammatic illustration for explaining the alignment process of Fig. 8A;

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Fig. 9 is ~~a perspective~~ ~~an elevational mechanical~~ view of an imprinter assembly of the preferred embodiment;

Fig. 10 is a functional block diagram of the preferred embodiment;

Fig. 11 is an electronic block diagram corresponding to Fig. 10; and

Fig. 12 is a flowchart illustrating ~~fundamental~~ ^{certain} operations of the preferred embodiment.

GENERAL DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the drawings, and initially to Fig. 1 thereof, a system 10 for dispensing lottery tickets includes a central computer 12 and three remote ticket-dispensing units 14, 16 and 18. Although the illustrated embodiment includes three such ticket-dispensing units, it will be understood that any number of units may be employed, and indeed it is anticipated that a very large number of units will be employed in a state-wide or nation-wide lottery system. For the purposes of the present description, the lottery will be assumed to be a state-wide lottery run by a state authority. However, the present invention is applicable to other lotteries such as nation-wide or city-wide lotteries.

Each unit 14, 16, 18 is located at a separate location across the state in, for example, grocery stores, liquor stores and the like, and functions completely independently of the other units. Each remote unit 14, 16, 18 is independently operated by a sales agent or vendor, generally the store owner who sells the lottery tickets as part of his business, receiving a percentage of the purchase

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price of each ticket sold from the state agency which runs the lottery. However, each unit 14, 16, 18 ~~is~~ independently and selectively ~~placeable~~ in communication with central computer 12 through a respective modem 20, 22, and 24. Each modem 20, 22, 24 is advantageously positioned within its associated unit 14, 16, 18 at the particular location, or ~~located~~ ^{alternatively, it} may be adjacent thereto. Advantageously, each of the modems 20, 22 and 24 is a dial-up modem which is actuated by its own conventional touch-tone telephone circuitry (Fig. 10) to access a telephone line between ~~modem~~ ^{each of} 20, 22, 24 and ^{the} central computer 12.

In accordance with an aspect of the present invention, each unit 14, 16, 18 independently records each ticket sale ~~thereat~~ and stores sales data indicating at least the number of tickets sold and, more generally, the numbers, types and prices of different tickets sold. At periodic intervals, such as several times a day, once each day or once each week, each unit 14, 16, 18 is placed in communication with ~~central computer~~ 12 by central computer ~~is~~ dialing-up the respective modem 20, 22, 24. Once temporary communication is established, the ~~respective~~ sales data is transmitted from the units 14, 16, 18 to ~~the~~ central computer 12. ^{CP} Central computer 12 ~~can~~ operates as a central data processor to perform all the necessary accounting functions, including determining such information as the volume of sales and money due to or from each sales agent at his particular location. In addition, each unit 14, 16, 18 itself performs accounting functions on its own sales data. The transfer of the sales information from each unit

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14, 16, 18 takes only a very short period of time, usually on the order of seconds, and so the time during which modems 20, 22 and 24 ~~respectively~~ access the telephone lines is very brief, resulting in significant cost savings over systems which may require a continuous or extended connection over the phone lines to a central control ^{station} ~~x~~

Thus, in accordance with the present invention, it is unnecessary for the sales agent to prepare any paperwork to keep track of ticket sales, to make any accounting of the sales or to otherwise report such sales to the state authority. Similarly, it is unnecessary for the state authority to physically collect such sales data from the numerous individual sales agents. Instead, central computer

12, at the appropriate time several times a day ^{once} ~~a~~ each day or ^{once each week} ~~week~~, simply actuates each modem 20, 22, 24 by dialing the telephone number assigned thereto, as is conventional, and the sales data is transmitted from the respective unit 14, 16, 18 to central computer 12 without further intervention or action by either the agent or the state authority. This insures that sales data is sent promptly to central computer

12 ^{with minimum} ~~without the~~ risk of tampering and without ^{the} possible delays or losses ^{as} ~~through the mails~~. Furthermore, both the state

authority using central computer 12 and the sales agent using his unit 14 have access to a current, up-to-the minute sales accounting of how many tickets have been sold and how

much money is due. The state authority can then ^{determine} ~~know~~ each

sales agent's current ^{stock} ~~stack~~ of tickets and can resupply him

before the stock runs out; ^{which is a valuable commercial} ~~this capability is commercially~~

advantage for stabilizing cash flow, and can also, ^{as} ~~can be used to~~

efficiently close out a particular game. Central computer

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a 12 may account for each unit 14, 16 and 18 separately, and may also combine the sales data from all the units so as to provide a state-wide summary.

Of course, the sales data advantageously includes more data than just the number of tickets sold. It should include, for example, an agent number identifying the sales agent, a machine number identifying the particular remote unit, the sales agent's commission, frequently in the form of the percentage of the sales price, winning ticket values which the sales agent has redeemed, and the ticket purchase price, frequently in one dollar increments. Other sales data which may be automatically recorded by units 14, 16, 18 may be transmitted from an electronic cash register or entered by the agent on a control panel, as discussed below. This sales data, plus other types of sales data related to the particular ^{use} application, may also be included and transmitted to central computer 12.

Remote units 14, 16, 18 are responsive to accounting data calculated from the respective sales data stored therein to print a report for the sales agent, summarizing the accounting results. The format of these reports may vary with the particular lottery system used, but may advantageously take the form of the exemplary reports illustrated in Figs. 2A-D. Fig. 2A illustrates a daily sales report, Fig. 2B illustrates a weekly sales report, Fig. 2C illustrates a weekly invoice and Fig. 2D illustrates a current sales report. As shown, each report is individualized to the particular unit 14, 16, 18.

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Since each unit 14, 16, 18 can record both the number of tickets sold at the particular location and also the amount of money paid by the sales agent in redeeming certain types of winning tickets, the reports are then a *thorough* reflection of the sales and redemption activity and may completely replace the use of invoices between the state authority and individual sales agents.

computer Central computer 12 can be programmed *to* dial up any modem 20, 22, 24 in off hours to interrogate it and get an up-to-the minute accounting, which is an advantage in increasing cash flow. Modems 20, 22, 24 may alternatively include a timer mechanism programmed so as to automatically dial up central computer 12 at preselected intervals to ensure that the sales data is regularly transmitted. For security reasons, the sales agent advantageously should not have the responsibility for connecting central computer 12 and modems 20, 22, 24.

Central computer 12 is operative to send message data indicative of messages to units 14, 16, 18. These messages may be individualized for the respective units 14, 16, 18, for example stating whether the particular sales agent is behind in his payments. Alternatively, central computer 12 may send the same message to all units 14, 16 and 18. Such a message may be, for example, advertising announcing a new game or a special jackpot. These messages may be intended either for the agent or for the customers and, as discussed below, an advantageous embodiment of unit 14, 16, 18 includes separate message display sections for the two types of messages.

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Referring now to Figs. 3 and 4, a preferred embodiment of unit 14 will now be described. It will be understood that units 14, 16, 18 and all others within the lottery ticket distributing system are intended to be identical. Therefore, while a detailed description is given only with respect to unit 14, it will be understood that this description applies equally well to all other units within the system.

Referring first to Fig. 3, unit 14 is constructed as a box-like module advantageously designed to rest upon the surface of a counter 26 or the like. Unit 14 includes a *housing with a* front surface 28 which, when unit 14 is positioned on counter 26 and is in operation, is intended to face the sales agent or vendor standing behind counter 26. A *corresponding* ^a opposed back surface 30 of unit 14 is intended to face the customers when unit 14 is in operation. *advantageous* In accordance with an *important* aspect of the present invention, a control panel 32 including all necessary agent-operated controls is mounted at front surface 28, while a dispensing outlet 34 is manually accessible at back surface 30 by the customers. Thus, the sales agent may quickly and efficiently enter a sales command, for example in the form of the number of tickets to be dispensed, on control panel 34 at front surface 28, while the tickets are automatically presented in response to the command in dispensing outlet 32 at back surface 30. This structure eliminates the need for the sales agent to physically

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receive the lottery tickets from unit 14 and to personally hand the lottery tickets to the customer, as is done in conventional lottery ticket dispensers.

As illustrated in Fig. 3, control panel 32 is mounted at front surface 28 on an upper portion 36 thereof. Upper portion 36 ~~is~~ may be provided at an inclined angle relative to front surface 28 for ergonomic reasons to permit comfortable access to control panel 32 ^{is that is} but the angle of inclination is limited so that control panel 32 remains in substantially opposed relation to back surface 30. The angle of inclination is limited not only so that control panel 32 may be easily viewed and operated by the sales agent, but also so that it will be substantially blocked from view by any customer standing in front of counter 26 and facing back surface 30. This ~~prevents~~ minimizes the chance of any interference by the customer in reaching towards control panel 32 in an attempt to operate unit 14 in an unauthorized manner.

Control panel 32 includes a keypad 37 having a plurality of push-buttons 38 for entering data and commands into a control circuit 40 (Fig. 10) ~~which is located inside of the~~ ^{within} unit 14. Control circuit 40 is a microprocessor-based unit ~~may be a microprocessor-based~~ circuit or minicomputer which controls the operation of unit 14 ^{and is} ~~and is~~ described in greater detail below. Push-buttons 38 include numerical buttons bearing the digits 0-10, and an entry

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button for entering the corresponding numbers ^{into} ~~to~~ control circuit 40. Push-buttons 38 further may include a cash button, a report button, a sign-on button, a ticket length load button, a storage access button, and all other buttons necessary for entering all appropriate data ~~entry~~ and commands in accordance with the functions described below.

new IP In particular, when unit 14 has been activated, any number of tickets from 1 through 999 may be dispensed simply by depressing the appropriate numerical push-button 38 and the entry button 38. Thus, if the sales agent depresses the numerical push-button 38 bearing the digit "1", a confirming ^{number} ~~display~~ will appear on an operator LCD ~~device~~ 42, discussed below, and the sales agent may depress entry button 38 and a single lottery ticket will be dispensed and deposited in dispensing outlet 34 at back surface 30 (Fig. 4). The

customer simply reaches into dispensing outlet 34 to remove the ticket. Alternatively, if the sales agent depresses the numerical push-button 38 bearing the digit "5" and then ^{the} entry button 38, remote unit 14 will automatically deposit five [/] separated lottery tickets into dispensing outlet 34. There is no need for the sales agent either to count out the tickets or to physically receive the tickets and hand them to the customer. This significantly speeds up the ticket selling process, as the sales agent may concentrate on receiving money and giving change, a task which is both

new IP easier to perform ~~when not handling tickets~~ and more likely ~~when the agent is not handling tickets~~ to be accurate. Each ticket sold is counted, advantageously in response to operation of the mechanism which provides a separated ticket to dispensing outlet 34, and the number is

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(Figure 10)

stored as sales data in memory within control circuit 40. Other sales data, such as the price of the tickets ~~may~~ ¹ ~~also~~ ^{may} be stored ~~therein~~ ^{in memory}. When communication with central computer 12 is established, the sales data is send out from the memory by control circuit 40 and fed out over the phone line to ^{the} central computer 12.

Control circuit 40 similarly ~~receives~~ ¹ message data from ^{the} central computer 12 and stores it in the memory along with the sales data and the accounting data calculated therefrom. The report push-button 38 causes a selected one of the reports illustrated in Figs. 2A-D to be printed, for example on a tape by a thermal printer 140 (Fig. 10) and ~~presented at~~ ^{issued} ~~in the front surface 28 through slot 39~~ ²⁷ ~~28~~ ²⁷ ~~39~~ ²⁷. As mentioned above, central computer 12 may send messages to unit 14.

Some of these messages will be intended for the sales agent and not for customers, and so are considered to be control messages rather than advertising messages. To display these control messages, a display device, such as ^{the} ~~a~~ conventional LCD ^{display} _{device} 42 is provided in control panel 32 on ^{the} inclined surface 36 ^{and} adjacent keypad 37. In accordance with conventional techniques, central computer 12 can transmit message data indicative of these messages through modem 20 whenever modem 20 is actuated to transmit sales data from unit 14 to central computer 12. This down-loading of message data is achieved without any need to request the same by the sales agent. The placement of LCD display 42 on inclined surface 36 further shields the control message displayed thereon from the eyes of customers.

Alternatively, the control or other messages may be printed by thermal printer 140 on the tape and presented through slot ²⁷ ₃₉.

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A key 44 is also provided on control panel 32 for the purpose of controlling the operating mode of unit 14. In a locked or "off" mode of operation, unit 14 is disabled both from receiving commands from control panel 32 and from communicating with central computer 12 through modem 20. In a "normal" mode of operation, unit 14 is enabled to receive commands entered on control panel 32 and to dispense tickets, but remains disabled from communication with central computer 12. In a "communication" mode of operation, unit 14 is enabled for receiving commands through control panel 32 and is responsive to modem 20 to permit two-way communication between unit 14 and central computer 12. In the communication mode, unit 14 and modem 20 will answer a telephone call from central computer 12, or may be actuated, as by dialing the telephone circuitry within modem 20 to place a telephone call to central computer 12, and to thereafter exchange information. Key 44 has three different positions respectively associated with the three different operating modes of unit 14. Advantageously, key 44 must be inserted into unit 14 and turned to place unit 14 in either of the normal or communication modes, and is removable from unit 14 only when it is in the locked position to place unit 14 in the locked mode.

A second message display device 46, advantageously an LCD device, is located at back surface 30, advantageously on an upper inclined portion 48 thereof, for easy viewing by the customers. When message data from central computer 12 contains ~~advertising data indicative of~~ an advertising slogan or the like, a corresponding message ^{will} ~~may~~ be displayed on LCD display 46. Control circuit 40 in remote unit 14

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distinguishes between the two types of data and selects the appropriate LCD device 42, 46 or thermal printer 140 for ^(Figure 10) ~~to display the message~~ ~~display~~ TICKETS PARATOR OR "BURSTER"

A highly advantageous aspect of the present invention is that the lottery tickets within unit 14 are stored in a fan-fold ~~stream~~ ^{strip or "stream"} headed by a leading ticket and are not, as in conventional lottery tickets dispensers, ~~most~~ ^{stored} provided in stacks of pre-cut tickets for individual dispensing. Prior art ticket dispensers which did store the tickets in pre-cut form had the difficulty that two tickets ~~could be dispensed accidentally~~ instead of a single ticket when two tickets within the stack were stuck together. The present invention ^{essentially eliminates} ~~completely removes~~ the risk that two or more tickets may be dispensed ^{unintentionally} in place of a single ticket ~~first~~ ^{fan-fold form} ~~and~~ ^{or "burst"} ~~or "parator"~~ ~~mechanism~~ ~~addresses and removes~~ by providing a highly advantageous ticket separation mechanism for separating the leading ticket from the stream of tickets. This novel separation mechanism ^{alleviates} ~~addresses and removes~~ a difficulty which arises when tickets are to be dispensed from a fan-fold stream. In particular, a most common item fed from a fan-fold stream is the paper used to feed a printer controlled by a computer or the like. Such paper is relatively thin and flexible and ^{often} ~~further~~ has a column of perforations or holes at either side ^{so that it can be driven} ~~which may be fed into and positively held~~ by a tractor feed mechanism of the printer. Such a feeding mechanism provides automatic lengthwise and widthwise alignment of the paper as it is fed through the printer. However, lottery tickets conventionally do not have such columns of perforations and, indeed, are constructed from laminated layers of paper or

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new PP cardboard so as to be relatively stiff. ~~The~~ problem faced and solved by the transport mechanism in accordance with the present invention is how to ensure that each ticket as it becomes the leading ticket will be separated from the next following ticket precisely along the joinder line between the tickets. In such a fan-fold scheme, a line of weakness, for example a perforation line, is provided to define each ticket and to permit ~~folding~~ *fan-folding* of the stream of connected tickets. In the illustrated embodiment shown in Fig. 5, each fold contains a single ticket, for clarity of illustration, but in a preferred embodiment a number of tickets, for example five, may be provided within each fold.

new PP Simply to provide a knife edge or cutting blade to slice through the stream of tickets is disadvantageous, since such a knife edge may cut through the ~~stream~~ *tickets* at any point, such as in the middle of a ticket *therefore*, and so a highly precise alignment device *usually* must be provided with such a knife edge to bring it into precise alignment with the joinder line between tickets. *TD* The present invention provides a novel separation mechanism which bursts the leading ticket from the next following ticket along the line of weakness therebetween, instead of cutting the two tickets apart. Not only does this inherently reduce the risk of producing only half a ticket, but also it provides an automatic mechanical alignment of the tickets to their proper position for bursting. *PP* A separate alignment mechanism is also provided to adapt the burster mechanism to tickets of different, selected lengths and cooperates with the burster mechanism.

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to provide precise, rapid separation of each ticket from the stream.

More particularly, an advantageous embodiment of the ticket transport/separation system in unit 14 is schematically illustrated in Fig. 5. A plurality of individual tickets 49 are connected in a fan-fold ^{strip on} stream 50 which is drawn from the top of a stack 51. The tickets 49 are provided by the state authority in ~~stack~~ ^{fan-fold stock form} 51, which is compact and easily transportable when including, for example, ^{especially} ^{as many as} 1500 tickets. The illustrated embodiment shows a single ticket 49 within each fold, but it will be understood that a greater number of tickets could be provided within each fold. ^{new P} ^{→ Referring now to Figure 6, the ticket strip 50} Stream of tickets 50 is headed by a leading ticket 52 which is connected to a next following ticket 54 along a line of weakness 56, (Fig. 6) and it will be understood that each successive following ticket is separable from its neighbors by similar lines of weakness. ^{new P} ^{→ Returning to Figure 5, ticket strip 50} ^{56.} Stream of tickets 50 is fed along a dispensing path 57 from a storage area 58 holding stack 51 within unit 14 towards ^{the} dispensing outlet 34, and is transported along dispensing path 57 by a transport mechanism including opposed upper and lower feed rollers 60, 62 and opposed upper and lower exit rollers 64, 66. ^{the leading} ^{Leading ticket 52 is} separated from next following ticket 54 by a burster wheel 68 positioned adjacent dispensing path 57 at a bursting position 70 ^{therealong.} Consequently, ^{upper and lower} feed rollers 60, 62 are driven separately from ^{upper and lower} exit rollers 64, 66 so that ^{upper and lower} feed rollers 60, 62 transport ^{the} stream of tickets 50 from ^{the} storage area 58 up to ^{the}

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bursting position 70 ⁱⁿ ~~while upper and lower exit rollers 64,~~
 66 operate as "kick-out" rollers to discharge the separated
 leading ticket 52 from dispensing path 57 into dispensing
^{As shown in figure 7, a} outlet 34. ^{drive motor 72 (Fig. 8)} is provided to drive
~~upper and lower~~ feed rollers 60, 62, while a separate
^{the} "kick-out" motor 74 is provided to drive ^{the} ~~upper and lower~~
 exit rollers 64, 66.

When stream of tickets 50 has been transported to
^{the} bring the line of weakness 56 between ^{the} leading ticket 52 and
^{the} next following ticket 54 ^{to} bursting position 70, ^a burster
 wheel 68 is moved into bursting contact therewith in order
 to separate leading ticket 52 from next following ticket 54.

^{and in perspective in figure 7} As indicated schematically in Fig. 5, ^a burster wheel 68 is
 advantageously in the form of a circular burster blade
^{advantageous} which, in an ^{important} aspect, has a dull, rounded edge
 which does not cut stream of tickets 50, but rather exerts
 pressure against the top of stream of tickets 50 in a
^{up} direction to deflect it from dispensing path 57. ^{When} line

of weakness 56 is at bursting position 70, ^{upper and lower}
^{exit rollers, 64, 66} ^{grip} are gripping a portion of ^{the} leading ticket
^{exit} 52, while ^{upper and lower} feed rollers 60, 62 are similarly
^{grip} gripping a following portion of ^{the} stream of tickets 50, with
 the result that stream of tickets 50 is held between the two
 sets of rollers against substantial deflection from
 dispensing path 57. This enables the bursting force from
 bursters 68 to separate the tickets 52, 54. However, the
 grip on stream of tickets 50 by upper and lower feed rollers
 60, 62 and upper and lower exit rollers 64, 66,
 respectively, ~~nevertheless~~ permits a slight deflection of